Ecological Applications Research

Making a Difference: The Canada Land Inventory

Sustainable Development Branch, Canadian Wildlife Service

Fact Sheet 88-5

Managing Canada's Land Resources

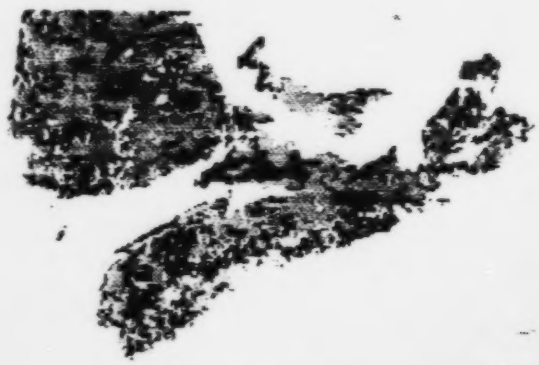
More than any other industrialized nation, Canada depends on land for its economic well being. One in three Canadian workers is employed directly or indirectly in agriculture, forestry, mining, energy and other activities based on land resources. Each year, these same activities account for about one-half of the value of our exports. Beyond the economic ties, the quality and diversity of Canada's lands are closely linked to Canadians' sense of national identity.

Wise management of the nation's land resources depends on reliable information about their inherent quality and extent. One of the most important sources of information about land capabilities nation-wide is the Canada Land Inventory (CLI). Launched as a federal-provincial cooperative venture in 1963 to support rural economic development programs, the CLI provided the first consistent measure of the renewable resource wealth of Canada.

This fact sheet reviews the CLI's contribution to resource management and land-use planning in Canada over the past 25 years. It provides a brief overview of the inventory's key features, and highlights how and where the inventory has been applied. Finally, the CLI's national benefits and its prospects for continuing to help Canadians respond to emerging environmental challenges are discussed.

Highlights

- One of the largest land inventories ever undertaken in the world, the CLI covers about 260 million ha of southern Canada for five resource sectors.
- Prime agricultural lands in British Columbia comprise only 5% of the province's total area, and are under continuing pressure from competing uses. In the 1970s, the CLI was instrumental in helping this province and others move quickly to designate agricultural lands for protection.
- Acid rain is a critical threat to Canada's environment. Analysis using the CLI has demonstrated that more than 70% of Eastern Canada's prime resource lands receive acid rain in levels threatening sustainable productivity.
- Waterfowl are an important economic, recreational and ecological resource. In support of the North American Waterfowl Management Plan, the CLI has helped screen out areas where habitat maintenance might conflict with agricultural production.
- The CLI led to the development of the Canada Geographic Information System, a first of its kind technical accomplishment in handling resource information.
- Not simply a valuable planning tool of the past the CLI, at 25, can make a vital contribution to efforts to understand and resolve urgent environmental problems.



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Understanding Canada's Lands

The Canada Land Inventory (CLI) remains one of the most comprehensive and ambitious national inventories ever completed, an undertaking as huge and challenging as Canada itself. In the early 1960s, governments were poised to target economic development programs in rural regions of the country. But how much productive land was available for farming, forestry and other land-based activities, and where was it located? There was a need to understand the mosaic of Canada in a new way.

260 million ha – Five Times Over

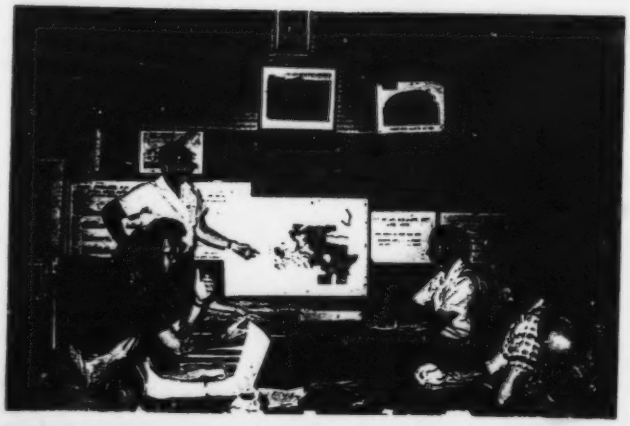
The scope of the inventory was nothing less than the southern, settled portions of Canada, a 260 million ha area – about 25% of the country – covering all of the nation's most productive lands, as well as those areas where land use conflicts and losses may arise. As impressive as that figure is, the effort was even more remarkable, because each of the five components was inventoried independently:

- Agriculture
- Forestry
- Wildlife-Waterfowl
- Wildlife-Ungulates
- Outdoor Recreation

(A limited amount of present land use and sport fish capability was also inventoried.)

From initial design, through to field surveys and preparation of final maps and reports, the inventory was achieved with a high degree of federal-provincial cooperation and leadership. It involved the efforts of more than 1 500 professional, research and technical staff – some of whom found themselves inventing new techniques and equipment along the way to complete the task. Direct federal investment alone into the CLI has been estimated at $40 million.

Today, the results of these efforts are readily available in the form of working-level manuscript maps (at a 1:50K scale), published maps (at 1:250K and 1:1 million), digital data and summary reports. In either map or digital form, the inventory is designed to be suitable for broad planning at regional, provincial and national levels.



The First Nation-Wide Classifications

The CLI provided the first uniform, nation-wide measure of the country's land-based renewable resource wealth. Each of the five resource inventories uses a national scale of seven classes to rank areas of land for capability. Class 1 has the highest capability or potential; class 7 the lowest. In general, Classes 1-3 are considered prime or highly productive lands.

Individual capability classes are further qualified through the use of lettered sub-classes (Figure 1). For example, land for agriculture can be limited by topography (T), excess water (W) and stoniness (S), and other factors. The outdoor recreation sector is unique in that lands are classified by positive features which relate to sustained recreational use, such as sport fishing (A), viewing wetland wildlife (W) and organized camping (K).

The present land-use component of the inventory provides a baseline, circa 1967, for measuring and assessing land-use trends and changes. Monitoring of land use since then has continued, and has been a principal mechanism of assessing wise land-use practices. Land use at the time of the survey is identified through the designation of code letters. For example, T indicates productive woodland, while U indicates non-productive woodland.

CLI Milestones

1958: *Special Committee of the Senate on Land Use in Canada* calls for "a systematic land-use survey . . . to provide for an economic classification of the land according to its suitability."

1961: *"Resources for Tomorrow" Conference* recommends that a national land capability survey be prepared to assist resource development efforts; Canadian government establishes *Agricultural and Rural Development Act* (ARDA) to undertake land improvement schemes and land-use adjustment projects in cooperation with provinces;

1963: *Government of Canada* launches Canada Land Inventory, in cooperation with provinces; design work begins on *Canada Geographic Information System* (CGIS), a computer mapping system to handle the mapped data;

1965: CGIS delivers the world's first *optical scanner* capable of "reading" maps into a computer;

1971: CGIS becomes the *world's first fully operational GIS*;

1976: *Land Capability for Agriculture Report*, the first in a series of CLI summary reports, is published and draws public attention to extent of prime farmlands;

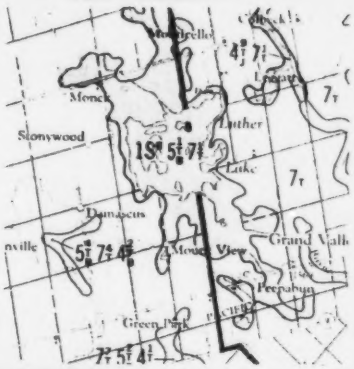
1980: *Federal Policy on Land Use*, incorporating CLI classifications, established to ensure consideration of potential impacts on land resources arising from federal activities;

1988: CLI's *25th anniversary*; one millionth CLI map distributed.

AGRICULTURE

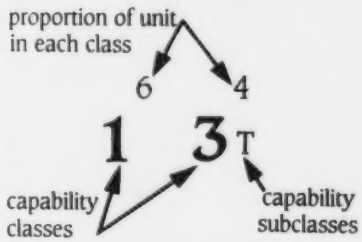
FORESTRY

UNGULATES



WATERFOWL

RECREATION



The symbol describes a map unit made up of 60% Class 1 land with no limitations and 40% Class 3 land with limitations due to topography (T).

Figure 1: Canada Land Inventory Mapping
For the same area of land, five inventories rank land capability on a national scale of seven classes, while letters indicate capability subclasses.

"A Timeless" Quality

The CLI's land capability information has not become out-of-date in the years since the inventory was completed. The decision to focus on land's inherent capabilities has given the information a "timeless" quality and has contributed to the inventory's longevity. Factors such as present use, accessibility, ownership, price and market conditions – while critical in land-use planning – were deliberately excluded when the inventory was designed. These factors can change quickly and make an inventory out-of-date. Instead, such questions are best considered only at the time actual plans are being made.

A User-Friendly Planning Tool

Availability and ease of use have helped the CLI become a familiar and accepted analytical tool. The inventory's classification systems are easy to understand. Planners and resource managers need little more than a sharp pencil to use CLI maps and reports. The complementary computer-based information is simple to access, as well, using terminals and micro-computers. Much of the CLI data now is available to users on inexpensive computer diskettes to allow for an even greater degree of convenient, interactive analysis.

Helping to Solve Resource Problems

The Canada Land Inventory continues to be applied to a rich variety of land-use and resource management problems in every region of the country. But how do planners and researchers actually use the information from the CLI? There are three basic questions that the inventory can help address.

1. *How much do we have and where is it?*

At this first level, planners use CLI information to prepare a simple inventory of a single resource sector. How much Classes 1-3 agricultural land is there in Manitoba? Where is it? Where is the prime moose and deer habitat in Alberta? How much good forestry land is there in New Brunswick? Is it scattered or concentrated in one area?

These questions seek to identify general opportunities and constraints of our resource base. By helping to answer "how much?" and "where?", the CLI information can allow planners to target new programs, such as economic development plans based on forestry, agriculture or recreation.

Maps are usually the most convenient means of accessing information at this level. Data are also available in digital format for computer analysis. As well, reports have been prepared for each CLI sector which summarize and list capabilities by province, census division, watershed and other areas.

Example: ***"New Parks With Water Access?"***

Suppose that park planners wanted to determine the potential for establishing, within an hour-and-a-half drive of our major cities, more parkland on the shorelines of lakes, rivers and oceans. While the eventual decisions will be based on such factors as land ownership, price, accessibility and current uses, the first step, obviously, is to find out "how much" and "where is it?".

The CLI outdoor recreation inventory provides exactly this information. Table 1 summarizes data on capability Classes 1-3 inventoried shoreline within a 121 km (75 mile) radius of selected cities. CLI maps will show the location of these sites, as well. The figures indicate that the potential for new shoreline parks varies greatly from city to city. Sudbury and Ottawa top the list, while Regina and Calgary have limited potential.

The CLI has not identified the precise location of new park sites. But it has enabled planners to focus their search very quickly, allowing them to target detailed planning on the most promising shoreline sites.

Table 1
CLI Recreational Capability Classes 1-3:
Inventoried Shoreline
Within 121 km of the
Centre of Selected Metropolitan Areas

Metropolitan Area	Class 1	Class 2	Class 3	Total
		(km)		
Halifax	–	29	433	462
Montreal	12	253	1,785	2,050
Ottawa	80	471	3,076	3,627
Sudbury	24	221	4,181	4,426
Regina	5	19	285	309
Calgary	4	59	132	195
Vancouver	69	456	1,558	2,083

(Source: Canada Land Inventory Report No. 14, 1978, *Land Capability for Recreation: Summary Report*)

2. *Which way do we go?*

When environmental interests vary, or potential uses conflict, information from two or more CLI resource sectors for the same area can be compared. The comparison and overlay helps planners choose among options – to identify where potential conflicts exist or do not exist, and to determine where decisions will be needed. Where is the land that has a high capability for both agriculture and forestry? How much prime waterfowl habitat is there in a proposed recreational corridor?

Again, the CLI is a targeting tool, narrowing down the range of choices using a pre-determined set of criteria. Planners can locate areas combining two or more desirable characteristics, or weed out areas of overlapping, conflicting characteristics.

A comparison of two or even three sectors can be a fairly simple matter, involving little more than a physical overlay of the single sector maps for the same area. For more complex comparisons, computer analyses are likely to be more efficient.

Example: ***"Ducks and Wheat?"***

Suppose wildlife managers want to protect prime waterfowl habitat in a particular rural municipality. They know that such habitat is frequently located throughout good farmland. Their goal is to locate those prime waterfowl areas that do not conflict with agricultural production.

As a first step, they obtain the CLI agricultural capability and waterfowl capability maps covering their rural municipality. Then they identify all the Classes 1-3 agricultural land and all the Classes 1-3 waterfowl area. The comparison identifies the general location and extent of areas where there are overlaps, and areas where there are no conflicts with agriculture. This latter group will be candidates for protection. (Figure 2.)

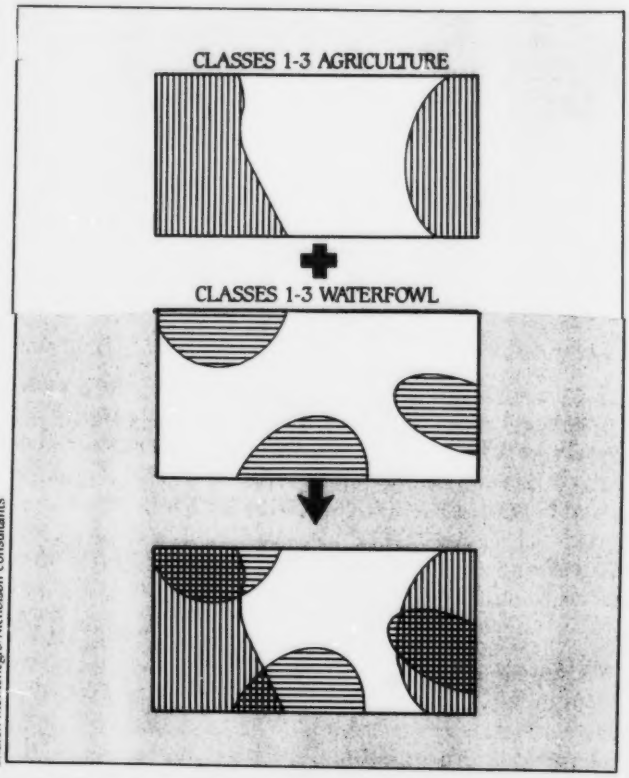


Figure 2: Overlay of Agriculture and Waterfowl Capability Maps

Overlay shows areas of potential resource conflicts (shaded) and areas which could be protected for waterfowl without agricultural conflicts.

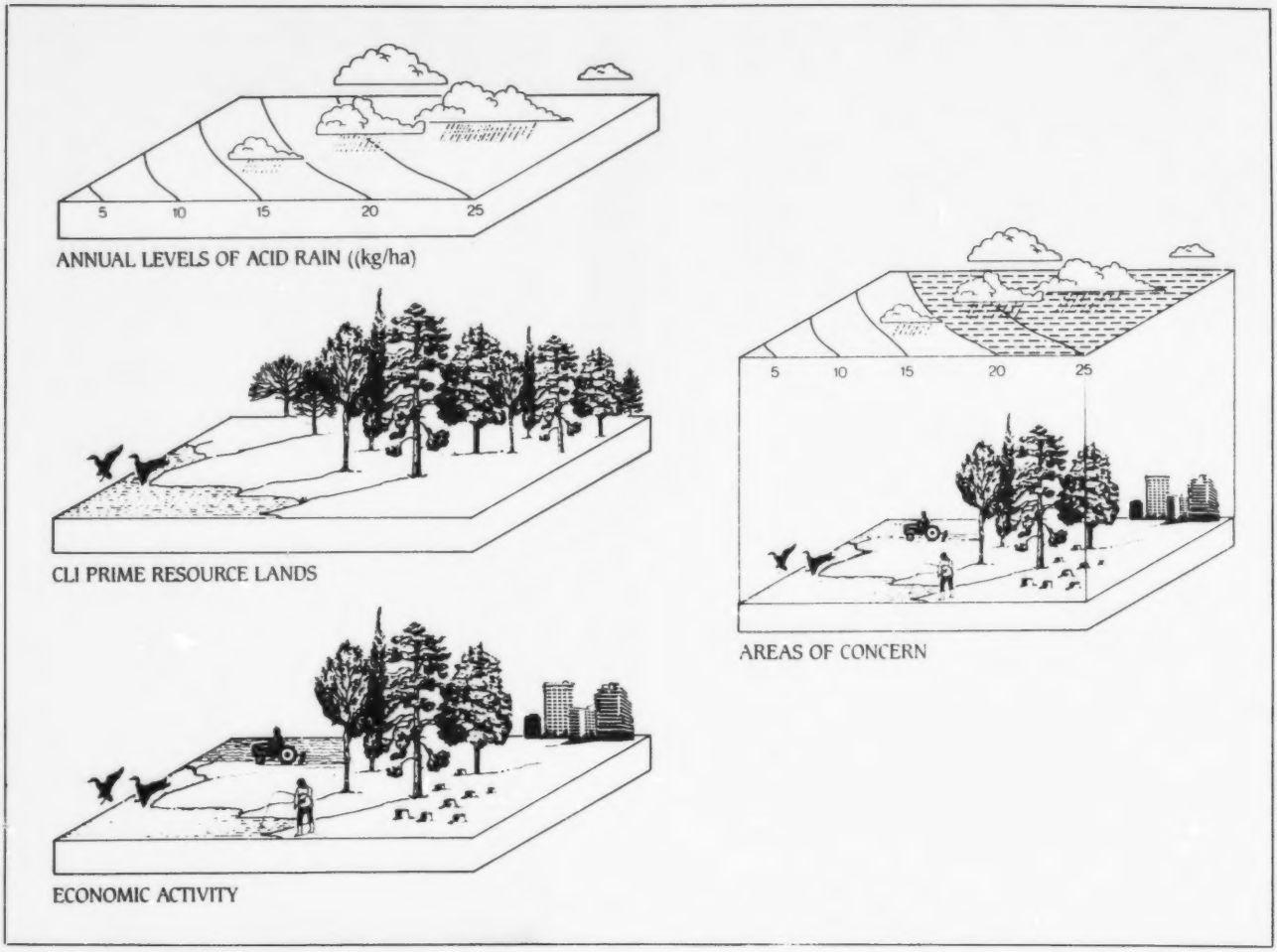


Figure 3: Economic Impacts of Acid Rain

Three sets of data are integrated to identify areas of concern where acid rain may lead to significant economic impacts.

3. *What about other economic and social factors?*

At this third level of analysis, CLI information can be integrated with other factors, such as population characteristics, political boundaries, employment levels, land ownership, prices, current uses, and zoning regulations. In this role, the inventory helps researchers address difficult planning and policy questions such as long term trends in land use related to land capability. Are some resources at risk? Is urban sprawl using up our prime farmland? What are the long term trends for clearing of wetlands? Where does pollution threaten our beaches? Environmental impact assessment is a common application of this kind of analysis.

The complexity of these kinds of problems makes simple map overlays less practical. Instead, analyses using the CGIS on microcomputers are usually required.

Example: ***"Is Acid Rain Threatening Jobs in Eastern Canada?"***

Acid rain is one of the most critical threats to Canada's environment. But can we determine to what extent acid rain is affecting land-based economic activities? Recently, researchers at Environment Canada examined this question. They integrated CLI data for "prime resource lands" – Classes 1-3 for agriculture, forestry, outdoor recreation, waterfowl and sport fishing – with known data on levels of acid deposition. The analysis has been taken another step, by adding information on employment levels and economic production. (Figure 3.)

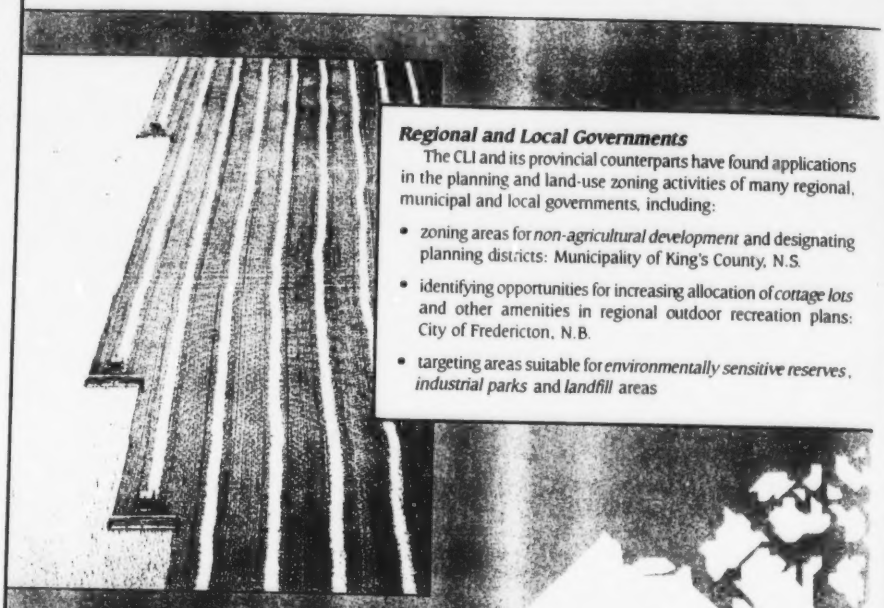
The study concludes that most of the prime resource lands in eastern Canada – including 84% of the agricultural land and 96% of prime forest capability land – receive yearly acid deposition in excess of 20 kg/ha, a level believed to threaten the sustainability of many components comprising these ecosystems. The productive prime land receiving high deposition levels accounts for 34% of total agricultural production value and employs 34% of the primary agricultural labour force; 70% of the primary forestry labour force is employed on the affected forestry lands.

At Work Across the Country

Federal Government

The CLI has found a wide range of applications throughout the federal government. Scientists, planners, resource managers, and policy makers concerned with land use, environmental protection, wildlife management, forestry, and the environmental impacts of major federal projects have used CLI data on issues such as:

- providing a base to help measure progress on environmental management: *Environment Canada's State of the Environment* reporting
- targeting areas for funding under the *North American Waterfowl Management Plan*, an international effort to improve waterfowl habitat
- locating candidate areas for *farmland consolidation* programs
- identifying the implications of land-use trends for long term *sustainable development* at the national level: eg. assessing the impact of urbanization on agricultural production
- identifying prime resource lands in Eastern Canada which are receiving high levels of *acid rain*
- assessing the susceptibility of various Atlantic Canada *shorelines to oil spills*, one part of a planning initiative to evaluate potential deep sea oil port locations
- identifying regional *tourism development opportunities* in association with national parks
- screening potential *environmental impacts* of major proposals under federal jurisdiction: eg. airports, harbours, interprovincial pipelines



Regional and Local Governments

The CLI and its provincial counterparts have found applications in the planning and land-use zoning activities of many regional, municipal and local governments, including:

- zoning areas for *non-agricultural development* and designating planning districts: Municipality of King's County, N.S.
- identifying opportunities for increasing allocation of *cottage lots* and other amenities in regional outdoor recreation plans: City of Fredericton, N.B.
- targeting areas suitable for *environmentally sensitive reserves*, *industrial parks* and *landfill* areas

Provincial Governments

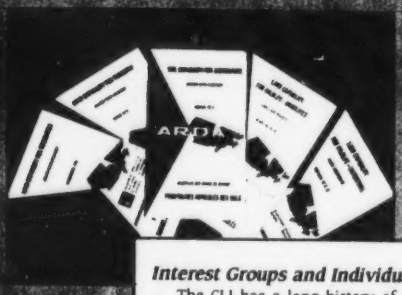
Several provinces extended the original boundaries of the CLI area to establish more extensive resource inventories. Both the CLI and these provincial expansions have found wide acceptance in meeting a range of planning and policy needs. Examples of provincial use include:

- identifying prime farmland to help *protect the agricultural production base*: British Columbia, Ontario, Quebec, Prince Edward Island and Newfoundland
- assisting in the implementation of *forestry management plans*: Ontario
- helping plan corridors of *proposed highways* by identifying areas of potential resource conflicts, such as prime farmland or prime wildlife habitat: Nova Scotia, Ontario
- developing *land reclamation* guidelines: Alberta
- targeting special lands for *ecological reserves*: key wetlands for waterfowl habitat
- helping determine criteria for capital grants in support of *soil conservation* projects: Ontario
- screening for *environmental impacts* of proposed projects: Peace River hydro-electric dam, British Columbia
- selecting appropriate areas for new or expanded *parks* to improve recreational opportunities: New Brunswick, Nova Scotia, Manitoba
- guiding the level of *compensation for land owners* affected by expropriation for a new hydro development or transportation corridor: Quebec
- identifying potential for increased agricultural development on or near *Indian Reserves*: Ontario

Industry

Private sector companies frequently find the CLI extremely helpful as a first-stage tool in identifying new economic opportunities or potential resource conflicts associated with a proposed development. CLI data have been put to use on such projects as:

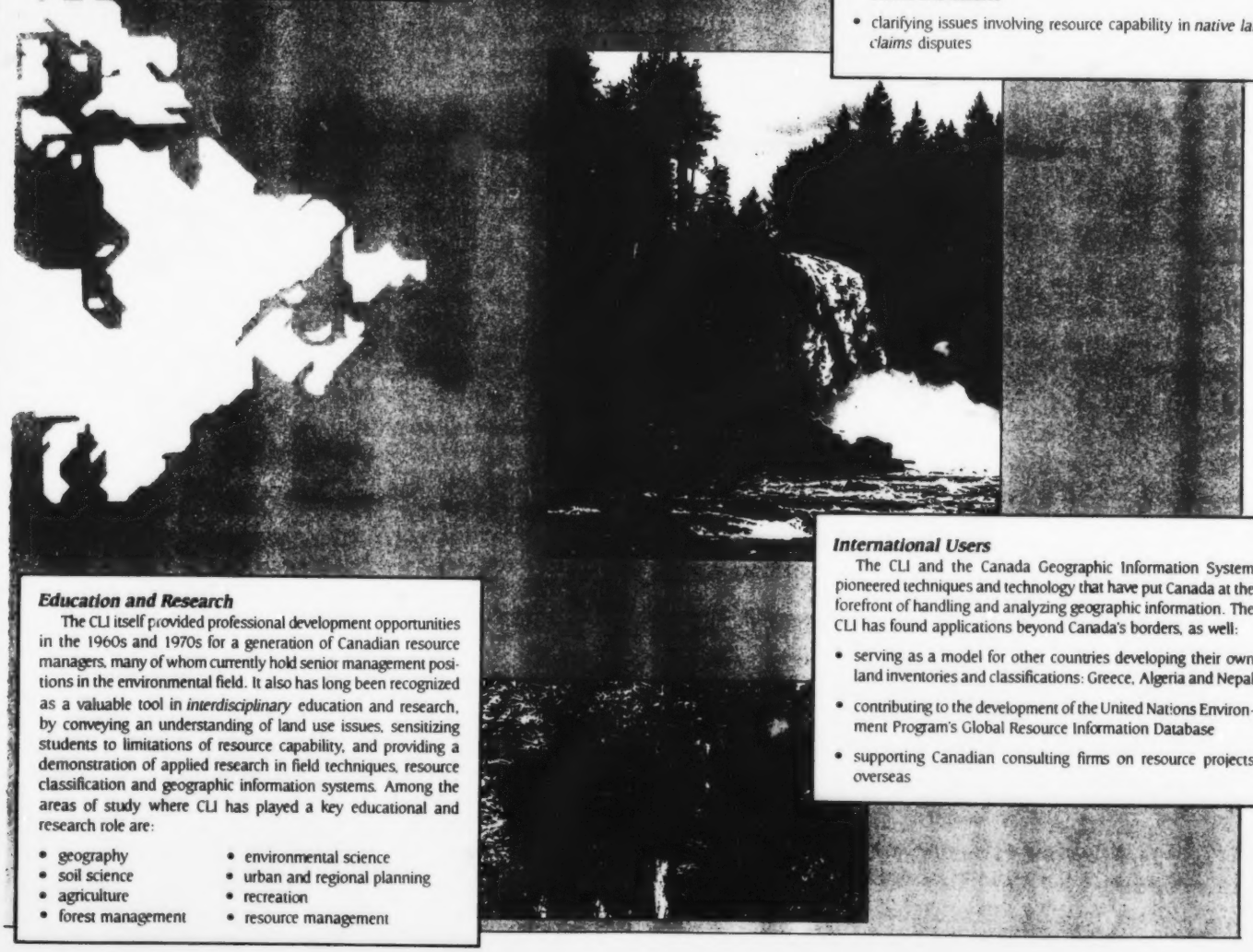
- assessing alternative *corridors*: hydro-electric transmission lines, oil and gas pipelines
- identifying areas suitable for more intensive *forestry management*: stand improvement, thinning and fertilization
- screening potential *environmental impacts* from a proposed development
- identifying where *urban development* is less likely to run into opposition due to other resource values



Interest Groups and Individuals

The CLI has a long history of providing information to the public, particularly to those individuals and groups who may lack the resources to undertake field research of their own. Examples of applications include:

- drawing the attention of policy makers to emerging issues or resource conflicts: loss of *prime farmland* to urban sprawl
- providing evidence at *public hearings*: wetlands preservation, farmland protection and municipal waste management
- providing background information for *media* in major news stories and features
- clarifying issues involving resource capability in *native land claims* disputes



International Users

The CLI and the Canada Geographic Information System pioneered techniques and technology that have put Canada at the forefront of handling and analyzing geographic information. The CLI has found applications beyond Canada's borders, as well:

- serving as a model for other countries developing their own land inventories and classifications: Greece, Algeria and Nepal
- contributing to the development of the United Nations Environment Program's Global Resource Information Database
- supporting Canadian consulting firms on resource projects overseas

Education and Research

The CLI itself provided professional development opportunities in the 1960s and 1970s for a generation of Canadian resource managers, many of whom currently hold senior management positions in the environmental field. It also has long been recognized as a valuable tool in *interdisciplinary* education and research, by conveying an understanding of land use issues, sensitizing students to limitations of resource capability, and providing a demonstration of applied research in field techniques, resource classification and geographic information systems. Among the areas of study where CLI has played a key educational and research role are:

- geography
- soil science
- agriculture
- forest management
- environmental science
- urban and regional planning
- recreation
- resource management

National Impacts and Benefits

The Canada Land Inventory has touched the lands and lives of Canadians in many ways. In a very short period of time, it has become a fundamental part of how we see and understand ourselves, and an indispensible tool in determining how our actions will affect our environment. Cutting across the spectrum of users and specific applications are six broad national *impacts* and *benefits* that have evolved from the CLI experience.

1. *An "Early Warning System"*

The CLI has served the country as an "early warning system" for our land-based resources. It has alerted decision-makers to threats to prime resource lands, and to potential conflicts before they arise. In some cases, it has drawn attention to areas of unsuspected concern. It has served to focus attention on the incremental, cumulative and long-term impacts of seemingly minor individual decisions.

". . . the program has contributed immensely to a revolution in land and resource planning in Canada."

W. Rees, Professor, Faculty of Regional Planning, UBC

". . . As a publicity device to acquaint a wider audience with resource scarcity, it has been of incalculable value."

M.D. Simmons, Consultant to The Council of Maritime Premiers

2. *An Improved Ability to Manage Resources*

A national inventory with consistent classification standards has greatly enhanced our ability to wisely manage our land resources. It gave us the first clear understanding of the opportunities associated with these resources. We could measure the location and extent of these resources, and estimate the losses arising from poor management.

As well, the CLI has helped broaden the scope of involvement in making decisions about land use and resource development. It has served to open the planning process to the Canadian public, through the availability of inexpensive and objective information on land capability.

The North American Waterfowl Management Plan

Ducks and geese are highly prized as gamebirds by millions of hunters, and even larger numbers of people enjoy observing and photographing them. In North America, waterfowl-related activities generate direct expenditures in excess of several billion dollars a year. Yet waterfowl populations are threatened by the loss and degradation of prime habitat through agricultural practices, urbanization and industrial development.

Such problems require a broad-based, coordinated response. The Canadian and U.S. governments have undertaken an ambitious 15-year cooperative effort, the *North American Waterfowl Management Plan*, to maintain and restore about 1.5 million ha of key habitat sites across the continent. The plan should help to ensure habitat for more than 62 million breeding ducks on the continent, and a fall flight of more than 100 million birds. Activities include: the promotion of soil and water conservation practices on farmland; local zoning of land uses to prevent further destruction of habitats; and financial incentives to encourage farmers and ranchers to manage their lands for waterfowl production, particularly for nesting habitat.

Canada's three Prairie provinces, with 80% of the country's inventoried Classes 1-3 waterfowl capability land, will be the focus for much of the Plan's activities. The CLI played an important role as a screening tool, helping weed out areas where significant conflicts with agricultural production might arise, and targeting more promising areas for detailed investigation.

Preserving Farmland Coast to Coast

Rarely have competing uses for land been so dramatically evident as in southwestern British Columbia in the early 1970s. Hemmed in by sea and mountains, booming urban and industrial development spilled onto the fertile lands of the Fraser River valley and delta. More than 4 000 ha of prime farmland were being lost to other uses every year – and this in a province where less than 5% of the area is of Classes 1-3 agricultural capability. In 1973, the provincial government established a land commission to help preserve farmland through the designation of Agricultural Land Reserves. Armed with the CLI capability designations, the land commission moved quickly to impose a temporary development freeze on most of the province's productive lands: agricultural Classes 1-4 in most regions and Classes 1-6 in ranching areas. Following public hearings and detailed planning, the Provincial Cabinet approved the protection of about 4.7 million ha in Agricultural Land Reserves.

The CLI has helped preserve farmland in other provinces, as well. Ontario identified foodland protection as a priority in the local planning process, and established the Food Land Guidelines of 1978 to assist municipalities in retaining prime farmland for agricultural production. For example, the guidelines recommend that CLI agricultural capability Classes 1-4 be retained, and that municipalities encourage non-farm development on Classes 5-7 land. In 1978, Quebec applied CLI capability information to establish a 1.8 million ha agricultural reserve along its principal river valleys. In 1974, Newfoundland established a specific "land priority for agriculture" designation to help preserve its scarce productive agricultural land and plan for the orderly and efficient development of its agricultural industry.

". . . the single most significant and productive federal influence on rural land use."

Mary Rawson, Council on Rural Development Canada

"It is my feeling that without this basic bio-physical inventory, the scheme of credible agricultural zoning intended to preserve agricultural land (in B.C.) in the long term would have been very difficult if not impossible to implement."

Gary Runka, Commissioner, British Columbia Land Commission

3. *A Change in National Perceptions*

The CLI has made the phrase "Class 1 land" a part of the Canadian vocabulary. The term carries a powerful image that reflects a national sensitivity to both the opportunities presented by our land resources and the responsibility to manage them wisely. By dispelling any "myth of plenty" we had about our resources, the inventory underlined the need to reconsider actions that until a short time ago were taken as sure signs of progress, such as the rapid expansion of cities onto farmland and the draining of wetlands.

4. *A Tool for Economic Development*

The CLI had its genesis in federal and provincial efforts to improve economic conditions in rural Canada. A solid knowledge of the resource base remains an essential first step in improving economic opportunities. By providing reliable information about the quality and extent of our land resources and land capabilities, the CLI has helped target economic development opportunities and job creation programs in all regions.

". . . a powerful and still continuing stimulus for better balancing land uses in the provinces and territories."

Stan Rowe, Professor, Plant Ecology, University of Saskatchewan

5. *A Catalyst for Resource Management Expertise*

The CLI lies at the core of environmental decision-making in Canada, both in fact and in terms of expertise among planners and many policy-makers. It provided professional development opportunities for a generation of land-use and resource management professionals. More than 1 500 professional and technical staff participated in the design and implementation of the inventory and in the pioneering development of related information systems technology. Many of those have held or currently hold positions as senior managers and policy-makers in provincial and federal governments and in the private sector. As well, the demands of the inventory helped spur the development of new research techniques and technologies that have given Canada a world-renowned reputation in handling geographic information.

Canada Geographic Information System

A crucial component to the inventory effort was the development of a computer-based system to store, process and retrieve the vast amounts of mapped information generated by the survey. Nothing like it had ever been developed. Paramount was the need to display comparisons between sectors or between geographic regions, and to superimpose socio-economic factors. The answer was the *Canada Geographic Information System* (CGIS), one of the technological accomplishments that have given Canada a world-wide reputation in handling geographic information.

Fully operational in 1971 after eight years of design, experimentation and refinement, it pioneered now-standard techniques for computer storage and manipulation of thematic resource information. An early accomplishment was the custom-design of the world's first optical scanner to "read" maps into a computer. In 1975, the CGIS became the world's first geographic information system to offer its customers interactive graphic retrievals on a national basis. Now managed by Environment Canada's Environmental Information Systems Division, the system has applied CLI data to more than 500 resource analysis studies. Digital CLI data occupy about 3 000 magnetic tapes, making it one of the largest digital resource inventories in the world.

Federal Policy on Land Use

To help ensure wise management of land resources, the Government of Canada adopted the Federal Policy on Land Use (FPLU), in 1980. The policy ensures that land impacts of all federal policies, regulations and programs are reviewed before the instruments are put into place. Guidelines cover ten sectoral concerns for land, with specific reference to land capability as established by the CLI for sectors such as agriculture, forestry, recreation and wildlife.

In the implementation of the FPLU, for example, CLI digital data and maps are used as one of several tools in the analyses of federally-initiated proposals to acquire, dispose or significantly change the use of federally-owned lands. Recent and current examples of its application include: the transfer of surplus lands from the Prairie Farm Rehabilitation Administration to the Canadian Wildlife Service; the decision to withdraw a proposal for a federal research laboratory in Newfoundland on lands zoned provincially as agricultural; and the assessment of socio-economic and environmental impacts of mining surface coal deposits in western Canada.

6. *Support for New Policies and Legislation*

The CLI has provided a valuable analytical framework to assist in the development of new policies, and to help frame new legislation. A government can clarify and measure its objectives by framing its intent in terms of the standards provided by CLI. For example, a province may wish to "preserve all agricultural land designated classes 1 to 3, as defined in the Canada Land Inventory." Federal land use guidelines, and regulations and policies in Prince Edward Island, Newfoundland, Ontario, Quebec, Manitoba, Alberta and British Columbia have used CLI information.

The Future: Responding to a New Generation of Environmental Concerns

Over the past twenty-five years, the Canada Land Inventory has developed into one of Canada's most important resource planning tools, not only for governments, but for industry, individuals and organizations, as well. Despite its long life, however, the CLI is not ready to be shelved. Far from it. It is still a *relevant planning tool*, helping planners, policy-makers and individuals respond to major economic and environmental challenges only now beginning to appear.

Nearing the 21st century, Canadians face a world rather different from the time which saw the birth of the CLI. It is a world which recognizes:

- more powerful, pervasive environmental threats, such as acid rain, long term climatic change and toxic chemicals;
- an increased capacity for human activity to affect environment at a global level, such as nuclear power plant accidents and massive deforestation;
- the power of daily decisions by individuals to affect environmental quality.

There is now, as well, a broader understanding of the links between a healthy environment and long term economic growth. In 1987, "Our Common Future", the report of the World Commission on Environment and Development (known also as the Brundtland Commission), drew global attention to the urgent need for all nations to acknowledge these links in their economic and social policies, and work towards the goal of sustainable development. Canada has been among the leaders in responding to this challenge. In 1986, the Canadian Council of Resource and Environment Ministers established the National Task Force on Environment and Economy with senior representatives from government, industry and citizen groups. Among the Task Force's far-reaching recommendations were the development of provincial and national conservation strategies, and the establishment of permanent

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"Round Tables" to help build consensus for action on environmental challenges. These efforts have led to a renewed vigour to consider the environmental implications of our actions, in our individual lives as well as in our governments and industries.

What will be the key environmental issues of the next decade? The following are certain to be among our chief concerns: long term climatic change; acid rain; ozone layer depletion; municipal waste management; water quality; toxic chemicals in the food chain; population pressures and urban growth; resource depletion; wildlife management and habitat protection; and preservation of unique lands.

The CLI, far from being simply a valuable instrument of the past and present, can continue to play a crucial role in helping Canadians meet many of these new challenges. It has at least three contributions to make:

- adding to our knowledge base;
- serving as a bridge to help more people become involved; and
- finding common ground to reach consensus and resolve conflicts.

The Canada Land Inventory has helped Canadians make better decisions about the use of our lands and resources. It has, equally importantly, helped to influence our perceptions and understanding of Canada. As we plan for the best use of resources so as to sustain long term economic growth without jeopardizing environmental quality, the data, expertise and sensitivity which are the legacies of the CLI experience will be needed more than ever.

Coast to Coast Facts

The CLI has helped Canadians understand the resource wealth of their land from coast to coast. Here is a small sampling of what we know, thanks to the inventory:

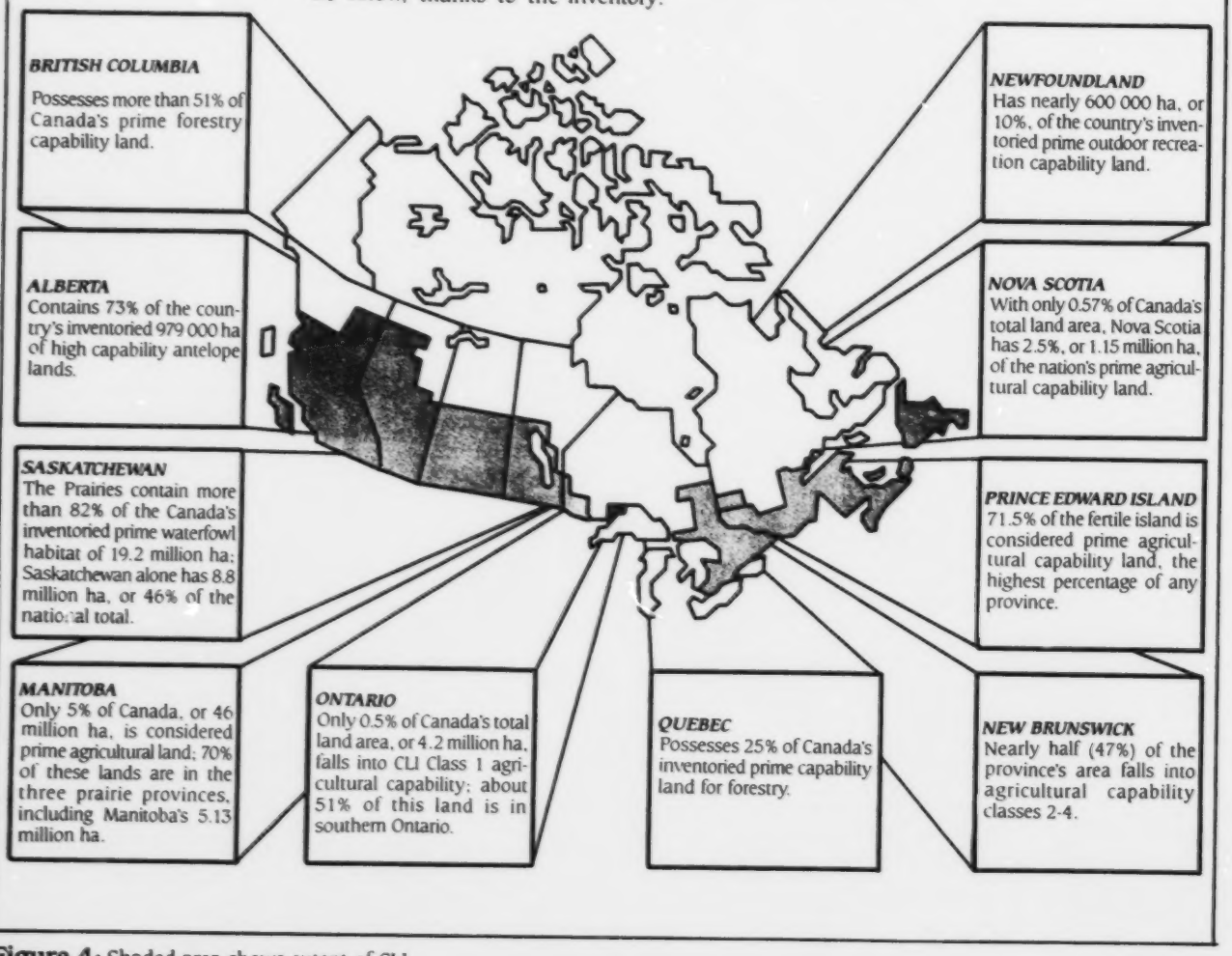
BRITISH COLUMBIA
Possesses more than 51% of Canada's prime forestry capability land.
ALBERTA
Contains 73% of the country's inventoried 979 000 ha of high capability antelope lands.
SASKATCHEWAN
The Prairies contain more than 82% of the Canada's inventoried prime waterfowl habitat of 19.2 million ha; Saskatchewan alone has 8.8 million ha, or 46% of the national total.
MANITOBA
Only 5% of Canada, or 46 million ha, is considered prime agricultural land; 70% of these lands are in the three prairie provinces, including Manitoba's 5.13 million ha.
ONTARIO
Only 0.5% of Canada's total land area, or 4.2 million ha, falls into CLI Class 1 agricultural capability; about 51% of this land is in southern Ontario.
QUEBEC
Possesses 25% of Canada's inventoried prime capability land for forestry.
NEW BRUNSWICK
Nearly half (47%) of the province's area falls into agricultural capability classes 2-4.
PRINCE EDWARD ISLAND
71.5% of the fertile island is considered prime agricultural capability land, the highest percentage of any province.
NOVA SCOTIA
With only 0.57% of Canada's total land area, Nova Scotia has 2.5%, or 1.15 million ha, of the nation's prime agricultural capability land.
NEWFOUNDLAND
Has nearly 600 000 ha, or 10%, of the country's inventoried prime outdoor recreation capability land.

Figure 4: Shaded area shows extent of CLI.

For Further Information

For more information on the Canada Land Inventory and its applications, and for a list of other fact sheets in this series, please contact:

Ecological Applications Research Division
Sustainable Development Branch
Canadian Wildlife Service
Environment Canada
Ottawa, Ontario
K1A 0H3

Pour de plus amples renseignements

Pour de plus amples renseignements sur l'Inventaire des terres du Canada et ses différentes applications, et pour une liste des autres feuillets d'information faisant partie de cette série, s'adresser à :

Recherche sur les applications écologiques
Direction du développement durable
Service canadien de la faune
Environnement Canada
Ottawa (Ontario)
K1A 0H3

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